

### **Remarks/Arguments**

The Office Action stated: that restriction to one of the following inventions is required under 35 U.S.C. 121: I. Claims 1 to 5, drawn to a composition, classified in claim 523, subclass 435; II. Claims 6 to 9 and 11 to 18, drawn to a method, classified in class 427, subclass 508; and III. Claims 10 and 19 to 21, drawn to a product, classified in class 428, subclass 413; that during a telephone conversation with Examiner Sellman and Virgil Marsh (Reg. No. 23,083) on August 18, 2006 a provisional election was made with traverse to prosecute the invention of Group I, Claims 1 to 5; and that affirmation of this election must be made by applicants in replying to this Office Action. In response, applicants hereby affirm their election of the invention of Group I, Claims 1 to 5. Claims 6 to 21 have been withdrawn from further consideration by the Examiner, 37 C.F.R. 1.142(b), as being drawn to a non-elected invention. Applicants reserve the right to file continuing and/or divisional applications directed to the non-elected inventions.

Applicants note that the Office Action stated: that a receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The Office Action stated: that applicants are reminded that upon cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application; and that any amendment of inventorship must be accompanied by a request under 37 C.F.R. 1.48(b) and the fee

required under 37 C.F.R. 1.17(i). In response, applicants note that the inventorship is unchanged upon the cancellation of the subject claims.

Claims 1 and 3 to 5 have been rejected under 35 U.S.C. 112, first paragraph, as being based on a disclosure which is not enabling. Applicants traverse this rejection.

The Office Action stated that a cationic moiety in resin (A) is critical or essential to the practice of the invention; that resin (A) without this moiety is not enabled by the disclosure; that applicants should see *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976); and that a cationic moiety is required in resin (A), provided by a cationic group-containing reactant in the formation of resin (A). In light of the amendments to Claim 1 proposed in this Amendment, applicants believe that resin (A) is enabled at present.

In light of the amendments to Claim 1 proposed in this Amendment, Applicants assert that Claims 1 and 3 to 5 are not based on a disclosure which is not enabling. Thus, they request that this rejection under 35 U.S.C. 112, first paragraph, presently be withdrawn.

Claim 4 has been rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Applicants traverse this rejection.

The Office Action stated: that the participation of an unsaturated reactant during the formation of resin (A) is critical or essential to the practice of the invention; that resin (A) formed without an unsaturated reactant is not enabled by the disclosure; that applicants should see *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976); and that an unsaturated reactant is required to form resin (A). In light of the amendments to

Claim 1 proposed in this Amendment, applicants believe that resin (A) is enabled at present.

In light of the amendments to Claim 1 proposed in this Amendment, Applicants assert that Claim 4 is not based on a disclosure which is not enabling. Thus, they request that this rejection under 35 U.S.C. 112, second paragraph, presently be withdrawn.

Claims 1 and 3 to 5 have been rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between elements. Applicants traverse this rejection.

The Office Action stated: that the omitted elements are: see rejection above in sections 10 and 11. In light of the amendments to Claim 1 proposed in this Amendment, applicants believe that Claim 1, and those that depend from it, presently are not incomplete for omitting essential elements.

In light of the amendments to Claim 1 proposed in this Amendment, Applicants assert that Claims 1 and 3 to 5 are not incomplete for omitting essential elements, such omission amounting to a gap between elements. Thus, they request that this rejection under 35 U.S.C. 112, second paragraph, presently be withdrawn.

The Office Action stated: that Claim 4 recites the limitation "epoxy resin (a)" in the coating composition of Claim 1; and that there is insufficient antecedent basis for this limitation in the claim. In response, applicants note that antecedent basis for the limitation "epoxy resin (a)" has been added to Claim 1 as amended herein.

The Office Action stated: that the phrase "cationic epoxy resin" does not explicitly require a cationic moiety in the unsaturated group-modified epoxy resin; and that "cationic" can be satisfied so long as the resin is capable of being deposited by cationic coating or so long as the resin is capable of cationic ring-opening. In response, applicants note that this wording is not present in the elected, amended claims herein.

Claims 1 and 5 have been rejected under 35 U.S.C. 102 (e) as being anticipated by Ogawa et al. (U.S. Patent No. 6,756,420). Applicants traverse this rejection.

The Office Action stated: that, regarding claims 1 and 5, Ogawa et al. discloses (1) a coating composition containing (A) an unsaturated group-modified "cationic" epoxy resin (Abstract; column 3, line 52, through column 4, line 2); (B) a blocked polyisocyanate crosslinking agent (Abstract; column 8, line 34, through column 9, line 10); and (C) a photopolymerization initiator (Abstract; column 9, line 60, through column 10, line 15); and (5) wherein the cationic coating composition further contains a polymerizable unsaturated group-containing compound (D) (column 4, lines 56 to 61: satisfied by the unsaturated epoxy alone (A and D not chemically distinguished) or by the combination of resin and monomer).

In response, applicants note, in particular, that the Office Action states, in pertinent part, that Ogawa et al. disclose a coating composition containing (A) an unsaturated group-modified "cationic" epoxy resin (Abstract, column 3, line 52 through column 4, line 2). In connection therewith, Ogawa et al. disclose, in column 3, line 52 through column 4, line 2, an unsaturated group-containing epoxy resin as an example of

the polymerizable unsaturated group-containing resin in the polymerizable compound (A).

However, Ogawa et al. neither teach nor suggest the unsaturated group-modified cationic epoxy resin (A) obtained by reacting an epoxy resin (a) having an epoxy equivalent of 180 to 2500 with an unsaturated group-containing compound (b) and a cationic group-containing compound (c) as claimed in amended claim 1 of the present invention. Accordingly, Ogawa et al. do not disclose the cationic electrodeposition coating composition as claimed in amended claim 1 of the present invention.

Incidentally, Ogawa et al. disclose that the coating composition is used as organic solvent type high-solids paints to be subjected to spray coating. However, Ogawa et al. do not disclose that the coating composition is used as the electrodeposition coating composition to be subjected to electrodeposition coating as claimed in amended claim 1 of the present invention.

For these reasons, applicants disagree that Claims 1 and 5 are anticipated by Ogawa et al. (U.S. Patent No. 6,756,420). Thus, they request that this rejection under 35 U.S.C. 102 (e) be withdrawn at present.

The Office Action stated: that this application currently names joint inventors; that, in considering patentability of the claims under 35 U.S.C. 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary; that applicants are advised of the obligation under 37 C.F.R. 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a

later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a). In response, applicants respectfully advise the Examiner that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made.

Claim 3 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (U.S. Patent No. 6,756,420). Applicants traverse this rejection.

The Office Action stated: that Ogawa et al. do not explicitly disclose that resin (A) has an unsaturated group equivalent of 6000 or less; that, however, applicants fail to show criticality for this range; that, furthermore, one skilled in the art would have been motivated to optimize this equivalent weight in order to achieve a balance of actinic and thermal crosslinking sites in the composition of Ogawa et al; that such a balance would ensure processability in their two-stage coating/curing process; that this ensured processability in turn ensures excellent coating performance properties; that it has been found that, "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," – In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); that "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," – In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980); that, therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the

unsaturated group equivalent weight of resin (A) in the composition of Ogawa et al. because a balance of actinic and thermal crosslinking sites would ensure processability in their two-stage coating/curing process; and that this ensured processability in turn ensures excellent coating performance properties.

Applicants respond in particular to the portion of the subject Office Action which reads, “[t]herefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the unsaturated group equivalent weight of resin (A) in the composition of Ogawa et al. because a balance of actinic and thermal crosslinking sites would ensure process-ability in their two-stage coating/curing process. This ensured process-ability in turn ensures excellent coating performance properties.”

Applicants note that, however, it would not have been obvious to one of ordinary skill in the art at the time of the invention to optimize the unsaturated group equivalent weight of resin (A) in the composition of Ogawa et al. for the following reasons:

Firstly, as above mentioned, Ogawa et al. neither teach nor suggest the unsaturated group-modified cationic epoxy resin (A) obtained by reacting an epoxy resin (a) having an epoxy equivalent of 180 to 2500 with an unsaturated group-containing (b) and a cationic group-containing compound (c) as claimed in amended claim 1 of the present invention.

Secondly, with respect to the balance of actinic and thermal crosslinking sites, Ogawa et al. disclose that the coating composition is subjected to spray coating and that an active energy ray is irradiated onto flying paint particles which have been

sprayed and/or paint which has been applied onto a substrate so as to make the coating composition partially reacted, and by subsequently heating the coating composition.

Ogawa et al. also disclose that when flying paint particles which have been sprayed and/or paint immediately after applied are irradiated with active energy ray in spray coating of the coating composition of this invention, polymerizable compound (A) in paint is polymerized to increase the viscosity of paint, with the result that the sagging of coating film can be prevented.

That is, Ogawa et al. teach that irradiation of the actinic ray is carried out for the purpose of polymerizing the polymerizable compound (A), increasing viscosity of paint, and preventing the sagging of coating film, but not for the purpose of curing as in the present invention.

In contrast, according to the present invention, irradiation of the actinic ray is carried out for the purpose of curing the coating film, and improving curing properties in combination with heat-curing.

According to the present invention, in the case where the cationic electrodeposition coating composition of the present invention is used, in a coating line of a part, for example, a frame in the shape of an even plate, rod and the like, the use of both irradiation and heating in the crosslinking reaction of the electrodeposition coating film makes possible reduction in steps and energy savings, resulting in making it possible to reduce exhaust gas, gum and soot from the drying oven.



For these reasons, applicants disagree that Claim 3 is unpatentable as obvious over Ogawa et al. (U.S. Patent No. 6,756,420). Thus, applicants request that this rejection under 35 U.S.C. 103(a) be withdrawn at present.

Reconsideration, reexamination and allowance of the claims at present are respectfully requested.

Respectfully submitted,

3/28/07  
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CERTIFICATE OF MAILING

I certify that this Amendment dated March 28, 2007, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 28, 2007.

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